to the south-east, to "Laidlaw's field." Here some were clearing away the superficial drift, and uncovering the quartzite ("whinstone" of the miners); others were blasting the quartzite that covered the quartz-vein (or the "quartz-barrels" of the miners); others were breaking up the "quartz-barrels," removing the quartz, and storing it up for the crushing-machine. The rock exposed on the removal of the quartz is a chloritic slate. On this the quartz lies, nearly horizontal, slightly inclined to the west, somewhat like a stratum. This is composed of the said "barrels," which appear from above to be lying alongside of each other and unconnected; but the captain of the "Victoria Claim" assured me that they were connected at the underside. The shape of the ridges of quartz is irregular, being sometimes angular, sometimes more or less rounded. At the time of my visit the appearance in the "Victoria Claim" was very striking; all the uncovered "barrels" had been removed except one and small fragments of others. There the entire one lay, in length 150 feet, like a gently tapering, branchless tree, inclined at an angle of 1 or 2 degrees, with the butt-end highest. The vein inclines towards Allen's field. Overlying this great and almost horizontal auriferous vein of quartz is the "whinstone" of the miners, a hard quartzite, as I have already stated, or altered siliceous stratum. This quartzite is sometimes very thick, naked, and rugged; and at other times it is covered with drift, presenting, after being uncovered, a scratched surface; it gradually thins until it disappears. Wherever this covering of quartzite is preserved, the horizontal vein, as far as I could observe, was entire. Wherever the glacier has succeeded in removing the quartzite, the vein has disappeared.

A good illustration of this was shown. In the "Victoria Claim" the miners were engaged in removing the remains of a "barrel" which had proved very rich. Hence the miners in the adjoining claim, which belongs to a Company in London, were induced to make immediate search for a continuation of the "barrel." Although only a few feet intervened, they found that the "barrel" had disappeared, together with its quartzite covering; drift and fragments being in its place. The boulders, however, produced by the destructive glacial agent had led to the discovery of the vein itself.

In order to show the relation that appears to exist between these gold-fields and the adjacent rocks exposed in the Railway-sections to which we have already referred, we proceed to review the series in descending order. We have, first, the top or quartzite-rock of Laidlaw's, then the great auriferous quartz-vein, next clay-slate and chloritic-slate; beneath, going in a north-westerly direction, the dark-coloured clay-slate and talcose slate, with veins of auriferous quartz in Allen's gold-field. Proceeding in a straight course to the Railway-junction, we pass over drift with masses and boulders of quartzite, evidently derived from the underlying rock. Before reaching the Railway-junction, at a distance of $1\frac{1}{2}$ or 2 miles, we descend from elevated ground into a hollow, where large quartzite masses abound. At the junction the cuttings in the quartzite appear. Following the Windsor Line, the ground on either side of the Railway is very un-

equal, consisting of lakes, swamps, and banks of drift, with large quartzite-boulders. At about 12 miles from the junction, we pass through cuttings in quartzite, with little interruption, until we reach Mount Uniacke, 13½ miles (railway measurement) from the junction. The bottom of the series is now arrived at. I would here observe that from this station onward I had the valuable assistance of Mr. Marshall, who constructed this part of the road.

Having reached Mount Uniacke, we come to the intruding granite; passing through this for some distance, we come to quartzite; and, with this slight interruption, the granite extends to about 4 miles from the place of its commencement.

Passing onward, we now begin geologically to ascend. We pass through cuttings in quartzite for a distance of about 2½ miles; and then we come to clay-slate, resembling that of Allen's and Laidlaw's gold-fields. The cuttings through this extend about 2½ miles. We then come again to quartzite: there are about 2½ miles of cuttings through this rock, and then we reach the Lower Carboniferous formation; of this we have half a mile of sandstone, unconformable to the quartzite, and then gypsum, &c.

Thus much for the arrangement of the rocks on the Windsor Line. On the Halifax and Truro Railway we may commence our observations at the top of the series, and proceed in descending order:—Near the Elmsdale Station, about 30 miles from Halifax, we have the Lower Carboniferous gypsum; then occurs a space which is obscure, but is probably occupied by Lower Carboniferous sandstone. There is rising ground in the distance on either side, on one of which sides is the Elmsdale gold-field, about 4 miles distant from the Station. Proceeding along the line toward Halifax, we approach the Grand Lake, which is 22½ miles from the Terminus. Before we reach the lake, we come to quartzite; then cuttings in this rock succeed for probably 2 or 3 miles; then comes clay-slate, extending probably about the same distance; the next 3 or 4 miles are obscure, and then, in the vicinity of and at the junction, as was seen in the preceding course of observation, quartzite occurs; and from this onward to the Terminus there are deep cuttings, with masses and boulders of quartzite. At the Terminus, slate again occurs; but this evidently belongs to another series, whose granitic axis occurs in the direction of what is called the North-west Arm.

From the preceding observations I would infer:—that Mount Uniacke and the granitic range of which it forms a part is the geological centre of the series which I have been attempting to illustrate. This and the other granitic bosses occur somewhat irregularly throughout the formation to which the group under consideration belongs, and, as far as I have observed them, are inconsiderable in height.

That when gold occurs on the one side of a granitic mass in this formation, it may reasonably be expected to occur on the other side of the anticlinal axis.

That as the granite-bosses are irregularly distributed throughout the formation in question, a corresponding irregularity may be expected to exist in the distribution of the gold-fields. This irregu-

larity is quite obvious on a comparison of the following authentic catalogue (drawn up by Mr. H. Poole) with a geological map of Nova Scotia.

Isaac's Harbour, Guysboro' County.
Country Harbour, „ „
Wine Harbour, „ „
Sherbrooke, „ „
Sheet Harbour, Halifax County.
Pope's Harbour, „ „
Tangier, Old, „ „
——, New, „ „
Elmsdale, „ „
Douglas Bridge, „ „
Grand Lake, „ „
Allen's, „ „
Laidlaw's, „ „
Laurence Town, „ „
Cole Harbour, „ „
Halifax, Halifax County.
Gold River, Lunenburgh County.
Martin's River (at the mouth and 5 miles up), Lunenburgh County.
Ovens, „ „
Long Island, „ „
Petite River, „ „
La Have River, „ „
Five miles above Bridgewater, Lunenburgh County.
Five Rivers, Liverpool County.
Foote's Cove, Yarmouth County.
Cranberry Head, „ „
Salmon River, Digby County.
Maxwell Town, „ „

In Pictou County, N.E. of the gold-bearing districts above referred to, Dr. Dawson and the author have described fossiliferous rocks containing Upper and probably Middle Silurian fossils *. There are also fossils of possibly a lower group; and as these strata are higher in the series than the gold-bearing rocks, the latter may probably be referable to the Lower Silurian.

* Canadian Naturalist and Geologist, August 1860, vol. v.